

REMARKS/ARGUMENTS

Reconsideration of the application is requested.

Claims 1-28 remain in the application. Claims 13-27 have been withdrawn.

In item 2 on page 2 of the above-mentioned Office action, claims 1-5 and 28 have been rejected as being anticipated by Paik et al. (US Pat. No. 5,879,964) under 35 U.S.C. § 102(b).

As will be explained below, it is believed that the claims were patentable over the cited art in their original form and the claims have, therefore, not been amended to overcome the references.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for, inter alia:

at least said corner regions of said rear side, said edge regions of said rear side, and said side border regions of said semiconductor chip having a plastic coating with a thickness between 0.5 μ m and 50 μ m. (Emphasis added.)

Paik et al. do not disclose a semiconductor chip where "said side border regions of said semiconductor chip having a

plastic coating with a thickness between 0.5 μm and 50 μm " as recited in claim 1 of the instant application. In fact, it is quite clear that the process of Paik et al. cannot result in a chip where all four sides of the chip are coated with plastic.

Paik et al. state in column 3, lines 44-46, that each wafer strip 2 contains a plurality of dies 1, for example, 4 to 6 dies. Those wafer strips 2 undergo the coating process as is also clearly shown in the figures, particularly Figs. 4 and 5. In the final step, the wafers are "cut into separate packages" (see column 5, line 13, and Fig 6 of Paik et al.). It is, therefore, clear that the packages at each end of the wafer strip are covered by plastic only on three sides and the packages in the center of the wafer strip are covered only on two sides because the remaining sides of the packages have been formed after the end of the coating process.

Fig. 6 is a top view of a package coated on three sides by plastic. Fig. 6 clearly shows that the side of the chip represented by the single upper horizontal line is not covered by the plastic coating 4, whereas the sides of the chip represented by the vertical lines and the lower horizontal line are covered by the plastic coating 4 as shown by the second outer vertical and lower horizontal lines.

Fig. 6a represents a cross-section taken horizontally across Fig. 6. A vertical cross-section would show that the side of the chip represented by the upper horizontal line in fig. 6 has no plastic covering.

Although Paik et al. mention, in column 5, lines 31-38, reinforcing the backsides of each chip, they do not mention coating the sides.

In contrast, in the invention of the instant application, all four sides of the chip are covered by a plastic coating in the micrometer range. It is clearly described on page 16, lines 11-23, of the specification of the instant application that the heat treatment which causes the plastic coating to soften and melt, covering the corner regions, edge regions and side regions, is performed after the chips have been cut from the wafer. This enables all four sides of the chip to be coated by the plastic.

The invention of the instant application also represents a clear improvement over Paik et al. because all four sides are covered by a thin plastic coating. This provides improved resistance to breakage and spalling of the crystalline material of the chips. This is particularly advantageous during testing of the chip as stated on page 1, line 16 to

page 2, line 2 of the specification of the instant application.

Clearly, Paik et al. do not show "at least said corner regions of said rear side, said edge regions of said rear side, and said side border regions of said semiconductor chip having a plastic coating with a thickness between 0.5 μ m and 50 μ m," as recited in claim 1 of the instant application.

Claim 1 is, therefore, believed to be patentable over Paik et al. and since claims 2-5 and 28 are dependent on claim 1, they are believed to be patentable as well.

In item 3 on pages 2-3 of the above-mentioned Office action, claims 6-12 have been rejected as being unpatentable over Paik et al. under 35 U.S.C. § 103(a).

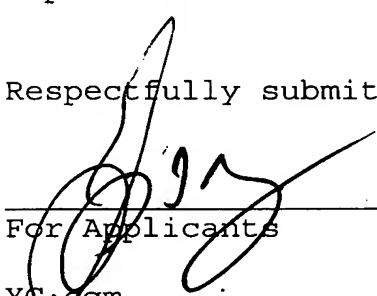
As discussed above, claim 1 is believed to be patentable over the art. Since claims 6-12 are dependent on claim 1, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1-12 and 28 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate a telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made. Please charge any fees which might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,


For Applicants

Gregory L. Mayback
Reg. No. 40,719

YC:cgm

December 15, 2003

Lerner and Greenberg, P.A.
Post Office Box 2480
Hollywood, FL 33022-2480
Tel: (954) 925-1100
Fax: (954) 925-1101